



IPW

PATENT  
DOCKET NO. HUV-031.03

In re Application of:

Jacobsen et al.

Application No: 10/802,670

Art Unit: 1645

Filed: March 17, 2004

Examiner: Not yet assigned

For: *Parallel Combinatorial Approach  
to the Discovery and Optimization  
of Catalysts and Uses Thereof*

**Certificate of Mailing**

I hereby certify that this "Information Disclosure Statement" is being deposited with the U. S. Postal Service as First Class Mail with sufficient postage on the date set forth below in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

August 9, 2004

Date of Signature and Mail Deposit

By: *Shirine Darvish*  
Shirine Darvish

Attention: Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT**

Sir:

In accordance with the provisions of 37 C.F.R. 1.97 and 1.98, Applicants hereby make of record the patents and publications listed on the accompanying Form PTO-1449, and other information contained herein, for consideration by the Examiner in connection with the examination of the above-identified patent application. Copies of refs. II and JJ and are not required because this application was filed after June 30, 2003 and copies of refs. A-HH and KK-QQ are not provided as they were previously cited by or submitted to the Patent Office in prior patent applications serial nos. 09/064,462, filed April 22, 1998; and 09/962,012, filed September 24, 2001; all relied upon for an earlier filing date under 35 U.S.C. §120.

**REMARKS**

In accordance with the provisions of 37 C.F.R. 1.97, this statement is being filed:

- ☒ (1) within three (3) months of the **filing date** of a national application other than a continued prosecution application under 37 C.F.R. 1.53(d), or within three (3) months of the **date of entry of the national stage** as set forth in 37 C.F.R. 1.491 in an international application, or before the mailing of the **first Office Action** on the merits, or before the mailing of a **first Office Action** after the filing of a request for continued examination under 37 C.F.R. 1.114; or
- ☐ (2) after the period defined in (1) but before the mailing date of a **final action** or a **notice of allowance** under 37 C.F.R. 1.311, and
- ☐ the requisite Statement is below, **OR**
- ☐ the requisite fee under 37 C.F.R. 1.17(p), namely **\$180.00**, is included herein, or
- ☐ (3) after the mailing date of a **final action** or **notice of allowance** but before the payment of the **issue fee**, **AND**
- ☐ the requisite Statement is below, **AND**
- ☐ the requisite petition fee under 37 C.F.R. 1.17(p), namely **\$180.00** is included herein.

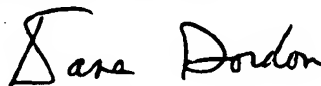
It is respectfully requested that each of the patents and publications listed on the attached Form PTO-1449, and other information contained herein, be made of record in this application.

**STATEMENT**

As required under 37 C.F.R. 1.97(e), Applicant(s), through the undersigned, hereby state either that [check the appropriate space only if either (2) or (3) is checked on the previous page and the Statement is required]:

- ☐ 1. Each item of information contained in the Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the Information Disclosure Statement; or
- ☐ 2. No item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing this Statement after making reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of the Information Disclosure Statement.

Respectfully submitted,



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Form PTO-1449

**INFORMATION DISCLOSURE CITATION  
IN AN APPLICATION**  
*(Use several sheets if necessary)*

Docket Number (Optional)  
HUV-031.03 (19787-3103)

Application Number  
10/802,670

Applicant  
Jacobsen et al.

Filing Date  
March 17, 2004

Group Art Unit  
1645

**U.S. PATENT DOCUMENTS**

INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
JK	6,316,616	11/13/01	Jacobsen et al.			
JK	6,709,824	03/23/04	Jacobsen et al.			

**FOREIGN PATENT DOCUMENTS**

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						YES	NO

**OTHER DOCUMENTS**
*(Including Author, Title, Date, Pertinent Pages Etc.)*

JK	KK	Cole, et al., "Discovery of Chiral Catalysts through Ligand Diversity: Ti-Catalyzed Enantioselective Addition of TMSCN to meso Epoxides," Angew Chem. Int. Ed. 1996, 35(15), 1668.
	LL	Hoveyda, A.H., in "Handbook of Combinatorial Chemistry" Eds. Nicolaou, K.C.; Hanks, R.; Hartwig, W. Weinheim Germany: Wiley-VCH 2002, Vol. 2, page 991.
	MM	Hungarian Novelty Search Report Completed on May 29, 2002.
	NN	International Search Report Completed on August 27, 1999 and Mailed on September 09, 1999.
	OO	Lawrence et al.; "Complex Combinatorial Chemical Libraries Encoded with Tags", Cold Spring Harbor, The Trustees of Columbia University in the City of New York; March 28, 1997, (Abstract).
	PP	Lawrence et al.; "Complex Combinatorial Chemical Libraries Encoded with Tags", Cold Spring Harbor Laboratory, The Trustees of Columbia University in the City of New York; March 28, 1997 (Abstract).
	QQ	Shimizu et al. "Search of Chiral Catalysts through Ligand Diversity: Substrate-Specific Catalysts and Ligand Screening on Solid Phase," Angew Chem. Int. Ed. 1997, 36(16), 1704-1707.

EXAMINER	<i>[Signature]</i>	DATE CONSIDERED 10/9/95
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EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

LIST OF PUBLICATIONS CITED BY APPLICANT

(Use several sheets if necessary)

APPLICANT: Eric N. Jacobsen and Matthew Sigman

FILING DATE:  
March 17, 2004

GROUP  
1645

U.S. PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE (IF APPROP)
<input checked="" type="checkbox"/>	A	5,500,807	3/19/96	Lavin et al	364		
<input checked="" type="checkbox"/>	B	5,525,735	6/11/96	Gallop Et al	548		
<input checked="" type="checkbox"/>	C	5,545,568	8/13/96	Ellman	436		
<input checked="" type="checkbox"/>	D	5,573,905	11/12/96	Lerner et al	435		
<input checked="" type="checkbox"/>	E	5,582,997	12/10/96	Blondelle et al	435		
<input checked="" type="checkbox"/>	F	5,593,853	1/14/97	Chen et al	435		
<input checked="" type="checkbox"/>	G	5,599,538	2/4/97	Paul et al	424		
<input checked="" type="checkbox"/>	H	5,637,459	6/10/97	Burke et al	435		
<input checked="" type="checkbox"/>	I	5,650,489	7/22/97	Lam et al	530		
<input checked="" type="checkbox"/>	J	5,723,598	3/3/98	Lerner et al	536		
<input checked="" type="checkbox"/>	K	5,773,598	6/30/98	Burke et al	536		

FOREIGN PATENT DOCUMENTS

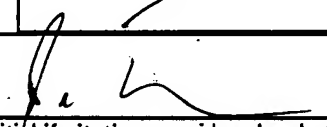
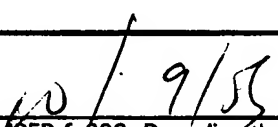
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATI ON YES NO

OTHERS (including Author, Title, Date, Pertinent Pages, Etc.)

<input checked="" type="checkbox"/>	L	Bousquet, C. et al., "Auxiliaires Cétoniques Chiraux dans la Synthèse Asymétrique des $\alpha$ -Aminoacides Selon Strecker," <i>Bull Soc. Chim. Fr.</i> pp. 513-520, 130, 1993
<input checked="" type="checkbox"/>	M	Burgess, K., et al., "New Catalysts and Conditions for a C-H Insertion Reaction Identified by High Throughput Catalyst Screening," <i>Angew. Chem. Int. Ed. Engl.</i> , 35, No. 2, pp. 220-222, 1996
<input checked="" type="checkbox"/>	N	Cogan, D., et al., "Catalytic Asymmetric Oxidation of <i>tert</i> -Butyl Disulfide. Synthesis of <i>tert</i> -Butanesulfinamides, <i>tert</i> -Butyl Sulfoxides, and <i>tert</i> -Butanesulfinimines," <i>Journal of the American Chemical Society</i> , Vol. 120, No. 32, August 19, 1998
<input checked="" type="checkbox"/>	O	Cole, B., et al., "Discovery of Chiral Catalysis through Ligand Diversity: Ti-Catalyzed Enantioselective Addition of TMSCN to <i>meso</i> Epoxides," <i>Angew. Chem. Int. Ed. Engl.</i> , 35, No. 15, pp. 1668-1671, 1996
<input checked="" type="checkbox"/>	P	Fadel, A., et al., "A Straightforward Synthesis of Both Enantiomers of Allo-Norcoronamic Acids and Allo-Coronamic Acids, by Asymmetric Strecker Reaction from Alkylcyclopropanone Acetals," <i>Tetrahedron: Asymmetry</i> 9 pp. 305-320, 1998
<input checked="" type="checkbox"/>	Q	Harada, K., et al., "Sterically Controlled Syntheses of Optically Active Organic Compounds. XIX. Asymmetric Syntheses of Amino Acids by the Strecker Reaction," <i>Bulletin of the Chemical Society of Japan</i> , Vol. 46, pp. 1865-1868, 1973

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R	Heine, A., et al., "An Antibody <i>exo</i> Diels-Alderase Inhibitor Complex at 1.95 Angstrom Resolution," <i>Science</i> , Vol. 279, March 20, 1998
S	Kunz, H., et al., "Stereoselective Synthesis of L-Amino Acids via Strecker and Ugi Reaktionen on Carbohydrate Templates," <i>Synthesis</i> , pp. 1039-1042, November 1991
T	Kunz, H., et al., "Reversal of Asymmetric Induction in Stereoselective Strecker Synthesis on Galactosyl Amine as the Chiral Matrix," <i>Tetrahedron Letters</i> , Vol. 29, No. 35, pp. 4397-4400, 1988
U	Nakamura, H., et al., "Catalytic Asymmetric Allylation of Imines via Chiral Bis- $\pi$ -allylpalladium Complexes," <i>J. Am. Chem. Soc.</i> , 102, pp. 4242-4243, 1998
V	Reetz, M., et al., "Creation of Enantioselective Biocatalysts for Organic Chemistry by In Vitro Evolution," <i>Angew. Chem. Int. Ed. Engl.</i> , 36, No. 24, pp. 2830-2832, 1997
W	Romesberg, F., et al., "Immunological Origins of Binding and Catalysis in a Diels-Alderase Antibody," <i>Science</i> , Vol. 279, pp. 1929-1933, March 20, 1998
X	Sigman, M.S., et al., "Schiff Base Catalysts for the Asymmetric Strecker Reaction Identified and Optimized from Parallel Synthetic Libraries," <i>J. Am. Chem. Soc.</i> , 120, pp. 4901-4902, 1998.
Y	Stout, D.M., et al., "Asymmetric Strecker Synthesis: Isolation of Pure Enantiomers and Mechanistic Implications," <i>J. Org. Chem.</i> , 48, pp. 5369-5373, 1983
Z	Tan, D., et al., "Stereoselective Synthesis of over Two Million Compounds Having Structural Feature Both Reminiscent of Natural Products and Compatible with Miniaturized Cell-Based Assays," <i>J. Am. Chem. Soc.</i> , 120, pp. 8565-8566, 1998
AA	Taylor, S., et al., "Thermographic Selection of Effective Catalysts from an Encoded Polymer-Bound Library," <i>Science</i> , Vol. 280, pp. 267-270, April 10, 1998
BB	Weinges, K., et al., "Über Die Asymmetrische Strecker-Synthese mit (S)-(-)-1-Phenylethylamin als Chiralem Hilfsreagens," <i>Chem. Ber.</i> 110, pp. 2098-2105, 1977
CC	Weinges, K., et al., "Die Asymmetrische Strecker-Synthese von Aliphatischen $\alpha$ -Methyl- $\alpha$ -Aminosäuren," <i>Chem. Ber.</i> 106, pp. 2291-2297, 1973
DD	Yuasa, Y., et al., "An Improved Synthesis of (S)-Aspartyl-(7,7-Dimethyl-norborn-2R-yl)-(S)-Alanine Methyl Ester, A New High Intensity Artificial Sweetner", <i>Tetrahedron</i> , Vol. 48, No. 17, pp. 3473-3484, 1992
Examiner	Date Considered 10/9/03
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Form PTO-1449 <b>INFORMATION DISCLOSURE CITATION IN AN APPLICATION</b> <i>(Use several sheets if necessary)</i>			Pocket Number (Optional) <b>HUV-031.03 (19787-3103)</b>		Application Number <b>10/802,670</b>	
Applicant <b>Jacobsen, E. et al.</b>			Filing Date <b>March 17, 2004</b>		Group Art Unit <b>1645</b>	
<b>U.S. PATENT DOCUMENTS</b>						
EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
<b>FOREIGN PATENT DOCUMENTS</b>						
	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation YES      NO
JB	EE WO 98/03521	01/29/98	PCT			
<b>OTHER DOCUMENTS</b> <i>(Including Author, Title, Date, Pertinent Pages, Etc.)</i>						
JB	FF	Borman Stu, "Combinatorial Catalysts : Methods devised to create arrays of catalysts to screen for enantioselective activity", Chemical and Engineering News, Vol. 74, No. 45 pp. 37-39 ( November 4, 1996).				
	GG	Francis B. M. and Jacobsen N. E., " Discovery of Novel Catalysts for Alkene Epoxidation from Metal-Binding Combinatorial Libraries", Angewandte Chemie Int. Ed. Engl. Vol. 38 No. 7 : 937-941 ( April 1, 1999).				
	HH	Gennari et al., "Combinatorial Libraries: Studies in Molecular Recognition and the Quest for New Catalysts", Liebigs Annalen / Recueil pp. 637-647 (1997).				
EXAMINER			DATE CONSIDERED			
						
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